

# FOS Molecular Data Science - Timetable

## Week 1: November 22nd - 26th

<b>Mon</b>	<b>11-22 Introduction to FOS</b>		
09:15 - 10:00	<i>Lecture</i> Introduction to FOS Course	B.T. Heijmans	<b>V4-50</b>
10:00 - 11:00	<i>Lecture</i> Introduction to Molecular Epidemiology	P.E. Slagboom	
11:00 - 11:15	<i>Lecture</i> From SPSS to R		
	<b>11-22 Introduction to R</b>		
11:15 - 12:30	<i>Lecture</i> Introduction to R and the Cloud	L. Sinke	
14:15 - 17:00	<i>Practical</i> Introduction to R - I: Basics		
<b>Tue</b>			
09:15 - 12:30	<i>Practical</i> Introduction to R - II: Advanced	L. Sinke	<b>V4-56</b>
13:15 - 17:00	<i>Practical</i> Introduction to R - III: Bioconductor		
<b>Wed</b>	<b>11-24 GWAS</b>		
09:15 - 10:00	<i>Lecture</i> Introduction to Genome-wide Analysis	M. Beekman	<b>V2-34</b>
10:00 - 12:30	<i>Practical</i> Genome-wide Association		
13:15 - 17:00	<i>Practical</i> Genome-wide Association		
<b>Thu</b>			
09:15 - 12:30	<i>Practical</i> Genome-wide Association	M. Beekman	<b>V4-62</b>
	<b>11-25 RNA Sequencing</b>		
13:15 - 14:00	<i>Lecture</i> Introduction to Transcriptomics	R. Coutinho de Almeida	
14:00 - 17:00	<i>Practical</i> Analysis of Expression Data		
<b>Fri</b>			
09:15 - 10:30	<i>Practical</i> Analysis of Expression Data	R. Coutinho de Almeida	<b>V2-26</b>
	<b>11-26 Finding Genes in Practice</b>		
10:30 - 11:15	<i>Lecture</i> Finding Functionally Relevant Genes	Y. Ramos	
11:15 - 12:30	<i>Practical</i> Finding Genes in Practice		
13:15 - 17:00	<i>Practical</i> Finding Genes in Practice		

## Week 2: November 29th - December 3rd

<b>Mon</b>	<b>11-29 Functional Genomics</b>		
09:00 - 10:30	<i>Self Study</i> Freedman et al. (2001)	I. Meulenbelt	<b>V4-36</b>
10:30 - 11:30	<i>Discussion</i> Freedman et al. (2001)		
11:30 - 12:30	<i>Lecture</i> Functional Genomics		
	<b>11-29 Epigenetics</b>		
13:15 - 14:00	<i>Lecture</i> Introduction to the Epigenome	B.T. Heijmans	<b>V4-36</b>
14:00 - 17:00	<i>Practical</i> Epigenomics	R. Slieker	

## Tue

09:15 - 12:30 *Practical* Epigenomics

R.Slieker

**V2-26**

13:15 - 14:00 *Practical* Epigenomics

14:00 - 15:00 *Lecture* Epigenetics and Prenatal Famine Exposure

B.T. Heijmans

15:00 - 17:00 *Interim Evaluation of Participation and Interaction*

## Wed

### 12-01 Metabolomics

09:00 - 09:45 *Lecture* Metabolomics as Biomarkers

P.E. Slagboom

**V2-18**

09:45 - 12:30 *Discussion* Marioni et al. (2016)

13:15 - 14:00 *Lecture* Introduction to Metabolomics

M. Beekman

**V2-18**

14:00 - 17:00 *Practical* Metabolomics Data Analysis

E. van den Akker

## Thu

### 12-02 Clustering

09:15 - 10:00 *Lecture* Clustering

M. Reinders

**V3-14**

10:00 - 12:30 *Practical* Clustering

14:00 - 17:00 *Practical* Clustering

M. Reinders

## Fri

### 12-03 Single Cell Sequencing

09:15 - 10:00 *Lecture* Single Cell Sequencing

A. Mahfouz

**V2-18**

10:00 - 12:30 *Practical* Single Cell Sequencing - I

13:15 - 15:00 *Practical* Single Cell Sequencing - II

I. Khatri

15:00 - 17:00 *Practical* Single Cell Sequencing - III

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## Week 3: December 6th - 10th

## Mon

### 12-06 Next Generation Sequencing

09:00 - 10:00 *Lecture* NGS Technology

Y. Ariyurek

**V3-14**

10:00 - 11:15 *Lab Tour* NGS Technology

11:15 - 12:30 *Lecture* Exome Sequencing

### 12-06 Exome Sequencing

13:15 - 17:00 *Practical* Exome Sequencing

Y. Ramos

I. Meulenbelt

## Tue

### 12-07 MR and Integrative Omics

09:15 - 10:30 *Lecture* Integrative Analysis and MR

B.T. Heijmans

**V4-68**

10:00 - 12:30 *Practical* Integrative Analysis and MR

### 12-07 Animal Models of Ageing

13:15 - 14:00 *Lecture* Animal Models of Ageing

V. Raz

**V4-68**

14:00 - 15:30 *Self Study* Animal Models of Ageing

15:30 - 17:00 *Discussion* Animal Models of Ageing

<b>Wed</b>		<b>12-08 Project</b>		
09:15 - 11:00	<i>Lecture</i>	Where Does Research Start?	P.E. Slagboom B.T. Heijmans I. Meulenbelt	<b>V4-50</b>
11:00 - 12:30	<i>Project</i>	Formulation of Hypothesis		
13:15 - 16:00	<i>Project</i>	Formulation of Hypothesis & Objectives		
16:00 - 17:00	<i>Lecture</i>	Directed Acyclic Graphs		
09:00 - 11:30	<i>Project</i>	Proposal	B.T. Heijmans	<b>V4-50</b>
<b>Thu</b>				
09:00 - 11:30	<i>Project</i>	Proposal		
11:30 - 12:30	<i>Lecture</i>	Using online databases		
13:15 - 17:00	<i>Project</i>	Pilot Data		
<b>Fri</b>				
09:00 - 12:30	<i>Project</i>	Pilot Data		<b>V2-26</b>
13:15 - 17:00	<i>Project</i>	Pilot Data		

## Week 4: December 13th - 17th

<b>Mon</b>				
09:00 - 12:30	<i>Project</i>	Pilot Data		<b>V3-46</b>
13:15 - 17:00	<i>Project</i>			
<b>Tue</b>				
09:00 - 12:30	<i>Project</i>	Project Synopsis		<b>V3-12</b>
13:15 - 17:00	<i>Project</i>	Project Synopsis		
<b>Wed</b>				
09:00 - 12:30	<i>Project</i>	Prepare Presentation		<b>V2-34</b>
13:15 - 17:00	<i>Project</i>	Prepare Presentation		
<b>Thu</b>				
09:00 - 10:00	<i>Project</i>		P.E. Slagboom B.T. Heijmans I. Meulenbelt	<b>V4-68</b>
10:00 - 12:30	<i>Project</i>	Presentations & Defence		
13:15 - 16:00	<i>Project</i>	Presentations & Defence		
16:00 - 17:00	<i>Looking Back on the Course</i>			
<b>Fri</b>				
09:00 - 12:30	<i>Project</i>	Peer Discussions		<b>V4-26</b>
10:00 - 12:30	<i>Project</i>	Presentations & Defence		
13:15 - 15:00	<i>Reflective Assignment</i>		I. Meulenbelt B.T. Heijmans	<b>CZ-4</b> 762